

What is claimed is:

1. A multiport amplifying apparatus comprising:
an input hybrid network having a plurality of input ports;
a plurality of amplifiers connected to the output of said input hybrid
network; and
5 an output hybrid network connected to the outputs of said amplifiers
and having a plurality of output ports,
wherein said input hybrid network receives digital quadrature
baseband signals from said plurality of input ports, and evenly distributes the
input digital quadrature baseband signals to said plurality of amplifiers.
2. The multiport amplifying apparatus according to claim 1, wherein:
said input hybrid network comprises:
 2^n of said input ports; and
 $2^{(n-1)} \times n$ hybrid circuits,
5 wherein each of said hybrid circuits is a digital hybrid circuit for
processing a digital quadrature baseband signal.
3. The multiport amplifying apparatus according to claim 2, wherein
said digital hybrid circuit is a digital quadrature baseband hybrid circuit
comprising:
an adder for adding incoming digital quadrature baseband signals;
5 and
a subtractor for subtracting one digital quadrature baseband signal
from another.

4. The multiport amplifying apparatus according to claim 1, wherein:
said output hybrid network comprises:
 2^n of said output ports; and
 $2^{(n-1)} \times n$ output hybrid circuits,
- 5 wherein each of said output hybrid circuits is an analog hybrid
circuit for processing an analog RF-band signal.
5. The multiport amplifying apparatus according to claim 1, wherein:
each of said amplifiers is a digital quadrature baseband signal input
type amplifier for amplifying a digital quadrature baseband signal received
from said input hybrid network and delivering an analog RF-band signal.
6. The multiport amplifying apparatus according to claim 1, further
comprising a converter circuit disposed behind said input hybrid network for
converting a digital quadrature baseband signal to an analog RF-band signal,
said converter circuit including:
- 5 a digital-to-analog converter for converting the digital quadrature
baseband signal to an analog quadrature baseband signal;
a filter for filtering out an aliasing component produced by sampling,
said aliasing component being included in said analog quadrature baseband
signal; and
- 10 a quadrature modulator for orthogonally modulating the analog
quadrature baseband signal from which the aliasing component has been
removed,
- wherein each of said amplifiers is an analog RF input type amplifier
for amplifying the analog RF-band signal delivered from said converter circuit.

7. The multiport amplifying apparatus according to claim 1, wherein said input hybrid network further comprises:

a complex multiplier for adjusting the amplitude and phase of the digital quadrature baseband signal.

8. The multiport amplifying apparatus according to claim 1, further comprising a digital frequency converter disposed in front of said input hybrid network.

9. The multiport amplifying apparatus according to claim 1, further comprising a baseband combiner disposed in front of said input hybrid network for combining a plurality of the digital quadrature baseband signals.